PATENT APPLICATION

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**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor(s):   Colin I'Anson

Confirmation No.: 4695

Application No.: 09/770,074

Examiner: Angelica Perez

Filing Date: January 25 2001

Group Art Unit: 2684

Title: COST SENSITIVE CONTROL OF DATA TRANSFER INVOLVING A MOBILE ENTITY

**Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450**

TRANSMITTAL OF APPEAL BRIEF

Sir:

(in triplicate)

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on   *January 20 2005*   .

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( )   (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)
       for the total number of months checked below:

          ( )   one month $120.00
          ( )   two months $450.00
          ( )   three months $1020.00
          ( )   four months $1590.00

     ( ) The extension fee has already been filled in this application.

(X)   (b) Applicant believes that no extension of time is required. However, this conditional petition is
       being made to provide for the possibility that applicant has inadvertently overlooked the need
       for a petition and fee for extension of time.

Please charge to Deposit Account *08-2025* the sum of ___*$500.00*___ . At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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By *Joanne A. Romaniello*

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Respectfully submitted,

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Rev 12/04 (Aplbrief)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTEFERENCES

Appellant:	Colin L'Anson
Serial No.:	09/770,074
Filed:	January 25, 2001
For:	COST SENSITIVE CONTROL OF DATA TRANSFER INVOLVING A MOBILE ENTITY
Examiner:	Perez, Angelica
Art Unit:	2684
Customer Number:	27,623
Confirmation No.:	4695

Attorney Docket No.: 30001736-2

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir or Madam:

This Appeal Brief is filed under 35 U.S.C. § 134, and in accordance with the provisions of 37 C.F.R. § 1.192. The claims on appeal are set forth in Appendix A.

I. INTRODUCTION/REAL PARTY IN INTEREST

This appeal is made from the final Office Action (hereinafter "Final Action")

mailed July 20, 2004 The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II.   RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are known to appellants, appellants' attorney or the owner/assignee of the application (Hewlett Packard Corporation), which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III.   STATUS OF CLAIMS

Claims 1 through 15 and 17 through 24 are subject to appeal.

Claims 1, 2, 4, 8, 10, 13 through 15 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No.: 6,493,556 B1 to Stinson (hereinafter "Stinson") in view of United States Patent Number 6,487,172 B1 to Zonoun (hereinafter "Zonoun") and further in view of United Kingdom Patent Application Number 2,328,117 A to Hilsenrath (hereinafter "Hilsenrath). Claims 3, 5 through 7, 11 through 12, 20 through 21, and 23 through 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Stinson in view of Zonoun in view of Hilsenrath, and in further in view of European Patent No.: 848,560 A2 to Shaffer (hereinafter "Shaffer").

IV.   STATUS OF AMENDMENTS

Appellant made no amendment to claims 1 through 15 and 17 through 24 in the appellant's response to the Final Action dated September 20, 2004. As of the date of

filing of this Appeal Brief, the appellant still has not received any advisory action notwithstanding that the six month date elapsed on January 20, 2005. Appellant has notified the Examiner of this failure to issue an advisory action. In response, the Examiner notified the appellant that the last amendment was not in the image file wrapper system due to processing difficulties at the Office. Appellants then faxed a courtesy copy of the last amendment to the Examiner but still has not received any advisory action. The arguments on appeal are based on the pending claims as set forth in Appendix A. The claims are a clean copy of claims 1 through 15 and 17 through 24 as required by 37 C.F.R. § 1.192(c)(9).

V. **SUMMARY OF THE INVENTION**

Appellant's invention relates to a method and a service system. The method involves a cost-sensitive control of data transfer between a mobile entity and a data network through a cellular radio infrastructure to determine the best transfer service to use for transferring data via a mobile network. (See page 5, lines 26 through 29). Appellant's invention provides a real time adjustment of tariffs to more readily affect traffic loadings. (See page 5, lines 4 through 5).

The service system is operative to receive requests. The requests are for data transfers to and from mobile entities, and the service system determines how the request can be met within transfer criteria specified in the request. (See page 6, lines 16 through 19). A primary transfer criterion is cost and the service system is arranged to use the tariff data provided by the tariff server in determining whether and how the cost criteria can be met. (see page 6, line 20).

The cost criterion can be specified in a number of ways. For example, the criterion could simply be to use the lowest cost solution or a tariff no greater than a specific figure. Alternatively, a maximum cost figure could be specified. The cost criterion may be specified as a function of delay before transfer is started. The cost

criterion may be specifying a delay-cost function. (See page 7, line 15 through 20). Where tariff data for future time periods is available, the method is arranged to consider these future tariffs when seeking to satisfy the transfer request. (See page 6, line 22 through 23).

The method involves carrying out the following steps at a service system connected to the data network. Step (a) receiving a transfer descriptor indicative of, at least in general terms, the end points of a required data transfer, and of transfer criteria, comprising at least a cost criterion, to be met by the data transfer. Step (b) determining whether and, if so, how, the data transfer can be effected within the transfer criteria. Step (c) where step (b) produces a positive determination, instructing initiation of the data transfer in accordance with that determination. (See page 4, lines 4 through 13).

The transfer may be an upload of data to the mobile entity or a download of data. The transfer cost criterion specifies at least a maximum acceptable cost. Step (b) will typically operate to determine the lowest cost consistent with the transfer criteria. (See page 4, lines 13 through 17). Apart from cost, the transfer criteria may also specify alternative characteristics. The transfer criteria may example specify data rate and a maximum delay before transfer is effected.

The transfer criteria further comprise in a preferred embodiment, a delay criterion indicative of an acceptable delay before transfer initiation.

The present invention also provides for a service system. The service system has a data transfer request generated by requestor connected to the internet. The requestor makes a transfer request by sending a transfer descriptor to the service system.

The data transfer (that is the subject of the transfer request) is the transfer of data from a transfer endpoint connected to a network to mobile entity. The transfer descriptor is received at the service system by a request handler. The transfer

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descriptor is stored in a transfer-descriptor store. If the transfer descriptor concerns a on-off request or if the transfer descriptor concerns scheduled transfers the next one of which is due, the request may be passed to a solution finder. (See page 7, line 29 through page 8, line 6).

The solution finder finds, for the data transfer specified by data elements of the transfer descriptor, a data-transfer service and time. The time satisfies the transfer criteria specified by data elements of the descriptor.

For example, if the only criterion set is minimum cost, then the solution finder will retrieve tariff data from the tariff server. The solution finder will then find the data-transfer service and a time period offering the lowest available tariff. (See page 8, lines 20 through 21).

The solution finder will consider future time periods if tariff data is available for such periods and the maximum delay criterion of the transfer descriptor (when not set to zero). The solution finder may cache the retrieved tariff data in a cache.

With respect to dynamic changing tariffs, it will not be possible to state exactly what these changing tariffs will be for any given future time period. The solution finder makes decisions on the basis of such estimates. The actual cost at the time the transfer is effected may differ from the estimate. The operator publishes future fixed tariffs which the service system can selectively take instead of the variable tariff. This requires a reservation system by which the solution finder can book a certain capacity during a specified future time period at a given tariff, and an arrangement for correlating the data transfer with the booking.

If the solution finder is unable to find a data transfer service and time period satisfying the transfer criteria contained in the transfer descriptor, the solution finder communicates this to the request handler. The request handler then appropriately responds back to the requestor. The request handler then deletes the transfer

descriptor from the stored memory or alternatively retains the descriptor according to service system.

Where the solution finder is successful in finding a solution, the solution finder passes the transfer descriptor and details of the solution (service, time period) to a transfer instructor block. The transfer instructor then instructs initiation of the data transfer. (See page 8, line 17 through page 19, line 24).

VI. ISSUES

1.   Whether claims 1, 2, 4, 8, 10, 13 through 15, 19 and 22 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Stinson in view of Zonoun and further in view of Hilsenrath.

2.   Whether claims 3, 5 through 7, 11 through 12, 20 through 21, and 23 through 24 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Stinson in view of Zonoun in view of Hilsenrath, and in further in view of Shaffer.

VII. GROUPING OF CLAIMS

Claims 1 through 15, and 17 through 20 directed to a method form a group that stand or fall together.

Appellant believes that this group is separately patentable because none of the cited and relied upon references disclose or suggest any method of cost-sensitive control of data transfer between a mobile entity and a data network through a cellular radio infrastructure with the method carrying out the following steps at a service system of (a) receiving a transfer descriptor indicative of, at least generally, the end points of a required data transfer, and of transfer criteria to be met by this transfer, with the criteria having a cost criterion, and a delay criterion indicative of an acceptably delay before transfer initiation, and determining by reference to both current and future data-transfer

tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria. Appellant believes that the claim element of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria is separately patentable from the remaining claims.

Claim 21 forms a group that stands or falls by itself. Appellant states that claims of this group are believed to be separately patentable because claim 21 is directed to a method and the method has the step of determining by reference to a current data transfer and by reference to a future data transfer, whether the data transfer is complementary to the transfer criteria, and where a positive determination is produced, instructing an initiation of the data transfer.

Claims 22 through 24 form a group that stands or falls together. Appellant states that claims of this group are believed to be separately patentable because claim 22 is directed to a service system.

VIII. **ARGUMENT**

(i) **Rejections under 35 U.S.C. §112, first paragraph**

The Final Action <u>does not</u> reject any of the claims under 35 U.S.C. §112, first paragraph.

(ii) **Rejections under 35 U.S.C. §112, second paragraph**

The Final Action <u>does not</u> reject any of the claims under 35 U.S.C. §112, second paragraph.

(iii) **Rejections under 35 U.S.C. §102**

The Final Action <u>does not</u> reject any of the claims under 35 U.S.C. §102.

(iv)   **<u>Rejections under 35 U.S.C. §103 (a)</u>**

(a)   <u>Rejection of claims 1, 2, 4, 8, 10, 13 through 15 and 19 under 35 U.S.C. §</u>
<u>103(a) as being obvious over Stinson in view of Zonoun and further in view of</u>
<u>Hilsenrath.</u>

Claim 1 provides for a method of cost-sensitive control of data transfer between a
mobile entity and a data network through a cellular radio infrastructure. The method
comprises steps carried out at a service system. The first step (a) is of receiving a
transfer descriptor.

The transfer descriptor is indicative of, at least generally, the end points of a
required data transfer, and transfer criteria to be met by this transfer. These criteria
have at least a cost criterion, and a delay criterion.

The delay criterion is indicative of an **acceptable delay before transfer**
initiation.

The method further has the step of (b) determining by reference to **both current**
and future data-transfer tariffs whether and, if so, how, the data transfer can be
effected within the transfer criteria. The method also has the step (c). The step (c) has
where step (b) produces a positive determination, the method further instructing
initiation of the data transfer in accordance therewith.

Stinson discloses a method of establishing a communication path between first
and second subscriber units or a mater routing hub which routes traffic between
subscriber units by satellite links, wired links or wireless links. The first subscriber unit
is interfaced to a first communication network. The second subscriber unit is interfaced

to a second communication network. The method has the steps of receiving information regarding a cost of routing data between the first and the second communication networks. The information is expressed as a function of time of day at a location of one of the first or second subscriber units.

The method further has the steps of receiving <u>a quality of service indicator</u>. Then the method determines a communications path between the first and the second subscriber units. This is based on an optimization of the cost of the routing and the quality of service indicator.

The quality of service indicator is identified in the specification at col. 2, lines 67 through col. 3, line 6 as the following examples: (1) "<u>a maximum **latency** in data transmitted to and received from the subscriber unit</u>"; (2) "a minimum limit of channel of bandwidth in the communication path"; and (3) "a maximum number of errors, such as a bit error rate".

Appellant submits that according to the International Telecommunication Union and Federal Standard 1037C, **latency** is defined to one of ordinary skill in the art as "an inherent delay of that communication path or a transmission delay through a communication path". One skilled in the art would understand the element latency from this particular definition or as <u>a delay through a path</u>.

Notwithstanding, the Office has stated that the term "latency" is interchangeable with any delay. Appellant respectfully disagrees. During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their <u>plain</u> meaning unless appellant has provided a clear definition in the specification. See <u>In re Zletz</u>, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Still further, the claims must be read as they would be interpreted by those of <u>ordinary skill in the art</u>. See <u>In re Sneed</u>, 710 F.2d 1544, 218 USPQ 385 (Fed. Cir.

1983). Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. See <u>Sunrace Roots Enter. Co. v. SRAM Corp.</u>, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); See also <u>Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.</u>, 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the <u>ordinary and customary</u> meanings attributed to them by those of ordinary skill in the art.

The Office also states that "transmission delay through a communication path" can thus be interchangeably used as "criteria to be taken into consideration" and thus as an acceptable delay before transfer initiation. See Final Office Action at page 3. However, this is not found in <u>any</u> reference and the Office is using impermissible hindsight reconstruction to render claim 1 unpatentable. Simply put the Stinson reference does not disclose claim 1.

Stinson clearly discloses "a maximum latency <u>in data</u> transmitted to and received from the subscriber unit" or a measure of <u>a total time to arrival of the transmitted data at its destination</u> clearly "a delay through a path". Stinson does not disclose or suggest any step carried out at a service system of receiving a transfer descriptor indicative of the end points of a required data transfer, and transfer criteria to be met by this transfer with the criteria having at least a cost criterion, and <u>a delay criterion</u> and the delay criterion being indicative of an <u>acceptable delay **before** transfer initiation</u>.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See <u>In re Rijckaert</u>, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is established by presenting <u>evidence</u> that would have led one of ordinary skill in the art to combine the relevant teachings of the references to arrive at the claimed invention. See <u>In re Fine</u>, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) and <u>In re Lintner</u>, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). Evidence of a suggestion, teaching, or motivation to modify a reference may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg., Inc. v. SGS Importers Int'l., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), cert. denied, 117 S. Ct. 80 (1996), although "the suggestion more often comes from the teachings of the pertinent references," In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998).

The range of sources available, however, does not diminish the requirement for actual evidence. A broad conclusory statement regarding the obviousness of modifying a reference, standing alone, is not "evidence and when the Office relies on general knowledge to negate patentability (such as making plural elements into a single-piece assembly). In fact, that knowledge must be articulated and placed in the record. See In re Lee, 277 F.3d 1338, 1342-45, 61 USPQ2d 1430, 1433-35 (Fed. Cir. 2002) and In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

There is simply no articulation or suggestion in Stinson or any reference for the criteria having at least a cost criterion, and a delay criterion and the delay criterion being indicative of an acceptable delay before transfer initiation as claimed in claim 1.

"It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the "ordinary" and the "customary" meaning of the terms in the claims". See Ferguson Beauregard/Logic Controls v. Mega Systems, 350 F.3d 1327, 1338, 69 USPQ2d 1001, 1009 (Fed. Cir. 2003).

In Ferguson, the dictionary definitions were used to determine the ordinary and

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customary meaning of the words "normal" and "predetermine" to those skilled in the art, but in construing claim terms, the general meanings gleaned from reference sources, such as dictionaries, <u>must always be compared</u> against the use of the terms in context, and the intrinsic record must always be consulted to identify which of the different possible dictionary meanings is most consistent with the use of the words <u>by the inventor</u>. See <u>ACTV, Inc. v. The Walt Disney Company</u>, 346 F.3d 1082, 1092, 68 USPQ2d 1516, 1524 (Fed. Cir. 2003).

The Office is deviating from the meaning of the word that is accepted by those skilled in the art. There is simply no relationship between latency interpreted as time to arrival of transmitted data at its destination and the delay criterion being indicative of an acceptable delay <u>before</u> transfer initiation as claimed in claim 1.

The Office is arguing that "latency" can be read as a measure of the total time to arrival of transmitted data at its destination. The Office is arguing that "latency" can be read as made up of both any delay <u>before</u> and any delay <u>in transit</u> or "providing the time it will take the information to travel through the network". See Final Office Action at page 3. However, even if this were a reasonable interpretation of latency (which it is not), Stinson does not disclose any acceptable delay **before transfer initiation**.

Still further the appellant's invention is <u>superior</u> and has a number of <u>unexpected benefits</u> relative to Stinson, Zonoun, Hilsenrath and the combination thereof (which is not admitted as possible) because the present invention provides for a **real time adjustment** of tariffs that can more readily affect traffic loadings. (See appellant's application at page 5, lines 4 through 5). Stinson's quality of service indicator, in contrast, is deficient from a temporal perspective because as identified in the specification at col. 2, lines 67 through col. 3, line 6 as the service indicator is a maximum **latency** in data **already** transmitted to and received from the subscriber unit (or in the past).

This implies that the data has **already** been transferred in the path, and the costs incurred. Thus, Stinson provides benefits for future service, and no immediate benefits, let alone any real time adjustment. One skilled in the art would simply not be motivated to provide any real time adjustment based on a review of Stinson. "A greater than expected result is an evidentiary factor pertinent to the legal conclusion of obviousness ... of the claims at issue." See In re Corkill, 711 F.2d 1496, 226 USPQ 1005 (Fed. Cir. 1985). Appellants further state that a presence of a property (already disclosed in the specification at page 5, lines 4 through 5) not possessed by the prior art is evidence of nonobviousness. See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963). Appellant states that claimed invention yields unexpectedly improved properties or properties not present in the prior art of record.

Zonoun discloses an apparatus for selecting a route to a destination for a data packet. The apparatus has a processor and a table in memory for storing a metric value with the memory coupled to the processor. The processor broadcasts a request for a bid to transfer the data packet on a network where there are more than one path to the destination and receiving at least one bid in response to the broadcast request.

The bid has a routing metric. The routing metric is coupled with the transfer of the packet to the destination through a particular path and then the routing metric is stored in the table. The processor selects a desired path to the destination based on the received routing metric. Cost and delay values are included within the routing metric. The cost value is the cost in monetary terms in sending the packet, while delay is measured in terms of time (for example, seconds). Thus, the host can determine which path provides the most cost savings or which path provides the least delay, in order to select one winning bid as the desired path.

Hilsenrath discloses a least cost routing device being programmed with the least cost route for a given destination for a telephone call. The device uses data disposed on a recorded medium with cost route information for a number of indicated destinations. The device uses the data appropriate for the current time and looks up the

least cost route for an indicated destination. Hilsenrath does not reference future and current tariffs when determining the least cost route. Hilsenrath only concerns itself with the data for the current time period when deciding the route to use.

Stinson, Zonoun, Hilsenrath and the combination thereof do not disclose or suggest any steps of receiving a transfer descriptor indicative of the end points of a required data transfer, and of transfer criteria to be met by this transfer with the criteria comprising at least a cost criterion, and a delay criterion. Stinson, Zonoun, Hilsenrath and the combination thereof do not disclose or suggest any delay criterion being indicative of an **acceptably delay before transfer initiation**, let alone any step of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria, let alone instructing initiation of the data transfer in accordance therewith. Claims 2, 4, 8, 10, 13 through 15 and 19 depend from claim 1 and are patentable for at least the reasons discussed above for claim 1.

(b)   Rejection of claims 3, 5 through 7, 11 through 12, 20 through 21, and 23 through 24 under 35 U.S.C. § 103(a) as being unpatentable over Stinson in view of Zonoun in view of Hilsenrath, and in further in view of Shaffer.

Shaffer discloses a method of managing a communication route. The method has the steps of accessing capability to exchange communication data between remotely located sites. The method further has the step of monitoring one or more modes. The method during the monitoring determines a present time quality of service parameter value. The method further has the step that the present time quality of service parameter value is either input by a party or is implied. (See col. 8, lines 23 through 26).

The method further has the step of making a preliminary transfer mode selection. This is the least expensive mode that can also guarantee a request. The cost of this least expensive mode is a threshold cost. Thereafter, the method has the step of

examining whether the actual current present time quality of service parameter value is below the threshold cost and meets the requested present time quality of service parameter value, and if so, the mode is changed.

Stinson, Zonoun, Hilsenrath, Shaffer and the combination thereof do not disclose or suggest any method with the steps of receiving a transfer descriptor indicative of, at least generally, the end points of a required data transfer, and of transfer criteria to be met by this transfer, with the criteria comprising at least a cost criterion, and a delay criterion indicative of an <u>acceptably delay before transfer initiation</u>, let alone any step of (b) determining by reference to <u>both current and future data-transfer tariffs</u> whether and, if so, how, the data transfer can be effected within the transfer criteria and step (c) where step (b) produces a positive determination, instructing initiation of the data transfer in accordance therewith. Thus claim 1 is patentable over the cited and relied upon references. Claims 3, 5 through 7, 11 through 12, and 20 depend from claim 1 and are patentable for at least the reasons discussed above for claim 1.

Claims 21, and 23 through 24 are further patentable as none of the references discloses any step of receiving a transfer descriptor indicative of a plurality of end points of the data transfer, and a transfer criteria with the transfer criteria having a cost criteria and a delay criteria indicative of an acceptable delay before a transfer initiation, let alone determining by reference to a current data transfer and by reference to a future data transfer, whether the data transfer is complementary to the transfer criteria.

Moreover, none of the references disclose or suggest any step of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria. In contrast, Shaffer discloses consideration of on-going parameters for the modes that have the <u>acceptable</u> threshold cost. See col. 11, line 56 through 58 and col. 12, lines 1 through 11.
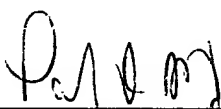
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IX. **CONCLUSION**

In summary, appellants respectfully request that the Board of Appeals reverse the final rejection of claims 1 through 15 and 17 through 24.

Respectfully Submitted,

Date: ___3- 4- 05___

_____
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APPENDIX A

Claim 1 (Previously presented): A method of cost-sensitive control of data transfer between a mobile entity and a data network through a cellular radio infrastructure, the method comprising carrying out the following steps at a service system

(a) receiving a transfer descriptor indicative of, at least generally, the end points of a required data transfer, and of transfer criteria to be met by this transfer, these criteria comprising at least a cost criterion, and a delay criterion being indicative of an acceptably delay before transfer initiation;

(b) determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria;

(c) where step (b) produces a positive determination, instructing initiation of the data transfer in accordance therewith.

Claim 2 (Previously presented): A method according to claim 1, wherein the transfer descriptor complies with one of the following instances, said instances being selected from the group consisting of: the transfer descriptor is supplied by a mobile entity and concerns downloading of data from the entity; the transfer descriptor is supplied by a mobile entity and concerns uploading of data to the entity; the transfer descriptor is supplied by a network-connected resource and concerns downloading of data from a mobile entity; the transfer descriptor is supplied by a network-connected resource and concerns uploading of data to a mobile entity, and any combinations thereof.

Claim 3 (Original): A method according to claim 1, wherein the cost criterion sets a maximum cost for effecting the data transfer.

Claim 4 (Original): A method according to claim 1, wherein the cost criterion specifies that the data transfer is to be effected at lowest cost consistent with the other

transfer criteria, if any.

Claim 5 (Previously presented): A method according to claim 1, wherein the cost criteria and the delay criteria are jointly expressed as a delay-dependent cost function for which the acceptable delay before transfer can be effected decreases with the maximum acceptable cost for the transfer, step (b) serving to determine the lowest cost at which the data transfer can be effected within a delay acceptable for that cost according to said cost function.

Claim 6 (Previously presented): A method according to claim 1, wherein the cost criteria and the delay criteria are jointly expressed as a set of cost functions for each of which the acceptable delay before transfer can be effected decreases with the maximum acceptable cost for the transfer, successive cost functions of the set, other than a first cost function, having higher maximum acceptable cost for a given delay than a preceding cost function of the set, step (b) using each cost function in succession, starting with said first cost function, until a positive determination is made for effecting the data transfer at a cost which is within the function currently being used, this cost being the lowest cost at which the data transfer can be effected within a delay acceptable for that cost according to said cost function.

Claim 7 (Original): A method according to claim 1, wherein the transfer descriptor indicates that the data transfer is to be repeated according to a predetermined schedule, the method involving repeating steps (b) and (c) for that transfer descriptor according to said schedule.

Claim 8 (Previously presented): A method according to claim 1, wherein said transfer criteria further comprise a minimum transfer bit rate.

Claim 9 (Original): A method according to claim 1, wherein the transfer descriptor references a predetermined set of transfer criteria accessible to the service system.

Claim 10 (Original): A method according to claim 1, wherein step (b) involves accessing tariff data for the cellular radio infrastructure, the tariff data being available through at least one of the following mechanisms: pre-loaded into the service system from information provided off-line; pre-fetched over the data network from a tariff server and stored at the service system; fetched as needed over the data network from a tariff server; provided by the infrastructure in response to a specific enquiry detailing the data transfer.

Claim 11 (Original): A method according to claim 1, wherein step (b) involves a negotiation conducted between the service system and a server representing the infrastructure.

Claim 12 (Original): A method according to claim 1, wherein step (b) involves specifying the required data transfer and the transfer criteria to a server representing the infrastructure and receiving back an indication of whether the infrastructure can effect the transfer as specified.

Claim 13 (Original): A method according to claim 1, wherein step (b) involves considering more than one cellular radio infrastructure for effecting the transfer and selecting the infrastructure that provides the lowest-cost fit with the transfer criteria.

Claim 14 (Original): A method according to claim 1, wherein step (b) involves considering multiple data-transfer service providers for effecting the transfer and selecting the service provider that provides the lowest-cost fit with the transfer criteria.

Claim 15 (Original): A method according to claim 1, wherein step (b) involves considering more than one cellular radio infrastructure for effecting the transfer and carrying out an auction between the infrastructures to determine which infrastructure is to be used.

Claim 16 (Cancelled).

Claim 17 (Original): A method according to claim 1, wherein step (c) involves sending a message to one endpoint of the data transfer specifying the set up of data transfer by that endpoint in accordance with said determination effected in step (b).

Claim 18 (Original): A method according to claim 1, wherein step (c) involves the service system contacting the infrastructure to initiate data transfer set up by the infrastructure in accordance with the determination effected in step (b).

Claim 19 (Original): A method according to claim 1, wherein step (c) involves the service system effecting the data transfer through itself including by setting up a data transfer path with the mobile entity through the cellular radio infrastructure in accordance with the determination made in step (b).

Claim 20 (Original): A method according to claim 1, wherein the data transfer concerns a transfer of data to the mobile entity, the data to be transferred being passed to the service system along with the transfer descriptor where it is temporarily stored, step (c) involving initiating a transfer to the mobile entity, of the data temporarily stored at the service system.

Claim 21 (Original): A method of effecting real-time regulation of data traffic through a cellular radio infrastructure, comprising the steps of:

(i) effecting traffic-dependent changes to the tariff structure for data transfer through the infrastructure and making the current tariff structure accessible over to a data network; and

(ii) effecting receiving a transfer descriptor indicative of a plurality of end points of said data transfer, and a transfer criteria, said transfer criteria having a cost criteria and a delay criteria being indicative of an acceptable delay before a transfer initiation;

(iii) determining by reference to a current data transfer and by reference to a future data transfer, whether said data transfer is complementary to said transfer criteria, and where a positive determination is produced, instructing an initiation of said data transfer, and wherein said service system is used for said data transfer, said service system being connected to the data network referred to in step (i).

Claim 22 (Previously presented): A service system for effecting cost-sensitive control of data transfer between a mobile entity and a data network through a cellular radio infrastructure, the service system comprising:

an input for receiving, from a transfer requestor, a transfer descriptor indicative of: at least in general terms, the end points of a required data transfer, and transfer criteria to be met by the data transfer, these criteria comprising at least a cost criterion, and a delay criterion indicative of an acceptable delay before transfer can be effected;

a determination device for determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria;

an output responsive to a positive determination by the determination device, to send a message for instructing initiation of the data transfer in accordance with that determination.

Claim 23 (Previously presented): A service system according to claim 22, wherein the cost and delay criteria are jointly expressed as a delay-dependent cost function for which the acceptable delay before transfer can be effected decreases with the maximum acceptable cost for the transfer, the determination device being arranged to determine the lowest cost at which the data transfer can be effected within a delay acceptable for that cost according to said cost function.

Claim 24 (Previously presented): A service system according to claim 22, wherein

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the cost and delay criteria are jointly expressed as a set of cost functions for each of which the acceptable delay before transfer can be effected decreases with the maximum acceptable cost for the transfer, successive cost functions of the set, other than a first cost function, having higher maximum acceptable cost for a given delay than a preceding cost function of the set, the determination device being arranged to use each cost function in succession, starting with said first cost function, until a positive determination is made for effecting the data transfer at a cost which is within the function currently being used, this cost being the lowest cost at which the data transfer can be effected within a delay acceptable for that cost according to said cost function.